comprise an anodized aluminum electrode, which may be heated, or a ceramic material having a buried electrode therein, the electrode being powered by an RF source 26 and associated circuitry 27 for providing RF matching, etc. The temperature of the substrate during processing thereof is monitored by temperature monitoring equipment 28 attached to temperature probe 29.

Kindly replace the paragraph beginning at page 7, line 14, with the following:

Reactor 20 can be used to carry out the gap filling process of the invention wherein a heavy noble gas is used to increase the etch-to-deposition rate ratio (EDR) for void-free filling of sub 0.5 μm high aspect ratio gaps. Gap filling processes are further described in U.S. Patent No. 6,106,678, which is hereby incorporated by reference herein. The heavy noble gas is effective in sputtering corners of sidewalls of the gaps such that the corners are facetted at an angle of about 45 degrees. The noble gas has a low ionization potential and forms massive ions which enhance the sputtering rate at a given RF power relative to the deposition rate, thus reducing the power required to fill a given gap structure. Moreover, the low ionization potential of the noble gas helps spread plasma generation and ion bombardment more uniformly across the substrate. As xenon is the heaviest of the non-reactive noble gasses, xenon is preferred as the noble gas. Krypton can also be used even though it has a lower mass and higher ionization potential than xenon. Argon is also suitable as the noble gas. Preferably, the amount of noble gas added is effective to provide a sputter etch component with a magnitude on the order of the deposition rate such that the

etch to deposition rate ratio is preferably about 5% to 70%, and more preferably about 10% to 40%.

Kindly replace the paragraph beginning at page 8, line 19, with the following:

In order to prevent damage to metal lines or the pre-existing films and structures on the substrate and to ensure accurate and precise process control, a heated mechanical or preferably an electrostatic chuck (ESC) is employed to hold the substrate. The ESC is preferably bipolar or monopolar. Preferably, the electrode is maintained at a temperature ranging from about 50°C to 350°C, in order to maintain the temperature of the wafer to about 325°C to 375°C. The preferred electrode temperature will depend on, among other things, the RF bias level and the particular deposition step. For example, during the gap-fill process, the electrode temperature is preferably maintained between about 80°C (full bias) to 200°C (no bias). Similarly, during the capping process, the electrode temperature is preferably maintained at between about 125°C (full bias) to 350°C (no bias). The gap-filling and capping processes are described herein. A suitable chuck for temperature control is disclosed in U.S. Patent No. 5,835,334, which is hereby incorporated by reference herein.

Kindly replace the paragraph beginning at page 10, line 27, with the following:

It has been demonstrated that for high density PECVD, improved deposition rate and uniformity can be achieved by employing a gas distribution system which provides uniform, high flow rate delivery of reactant gases onto the substrate surface, to both